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Recent achievements regarding the dynamics of weakly bound nuclei at energies around the Coulomb barrier

During the last 8 years, we have carried out a series of experiments in different laboratories involving reactions with weakly bound nuclei, mostly halo nuclei, impinging in medium mass and heavy targets at energies in the vicinity of the Coulomb barrier. For several years, the analysis of this kind of reaction has shown a degree of differences in the elastic scattering comparing with stable similar nuclei in the same conditions. On the other hand, the reaction products appearing in some of these reactions have shown the preference to follow not always the same process, when the reaction is measured in a wide angular range. The global conclusion till this moment shows that, not all the halos follow the same reaction processes when their dynamics is tested at barrier energies. In the present work, recent visited cases will be presented, as well as a brief description of the instrumentation developed for such studies.

Notes

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